



6712-01

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Parts 2 and 25

[IB Docket No. 17-95; FCC 18-138]

Use of Earth Stations in Motion Communicating with Geostationary Orbit Space Stations in Frequency Bands Allocated to the Fixed Satellite Service

AGENCY: Federal Communications Commission.

ACTION: Proposed rule.

SUMMARY: In this document, the Commission seeks comment on additional frequency bands for ESIM communication with GSO satellites. These additional frequencies would promote innovative and flexible use of satellite technology and provide new opportunities for a variety of uses.

DATES: Comments are due **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. Reply comments are due **[INSERT DATE 75 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: You may submit comments, identified by IB Docket No. 17-95, by any of the following methods:

- *Federal Communications Commission's Web Site:* <http://apps.fcc.gov/ecfs>. Follow the instructions for submitting comments.
- *People with Disabilities:* Contact the FCC to request reasonable accommodations (accessible format documents, sign language interpreters, CART, etc.) by e-mail: FCC504@fcc.gov or phone: 202-418-0530 or TTY: 202-418-0432.

For detailed instructions for submitting comments and additional information on the rulemaking process, see the SUPPLEMENTARY INFORMATION section of this document.

FOR FURTHER INFORMATION CONTACT: Cindy Spiers, 202-418-1593,

cindy.spiers@fcc.gov.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Further Notice of Proposed Rulemaking (FNPRM), FCC 18-38, adopted September 26, 2018, and released September 27, 2018. The full text of the FNPRM is available at <https://www.fcc.gov/document/fcc-facilitates-use-satellite-earth-stations-motion-0>. The R&O and FNPRM is also available for inspection and copying during business hours in the FCC Reference Information Center, Portals II, 445 12th Street SW., Room CY-A257, Washington, DC 20554. To request materials in accessible formats for people with disabilities, send an email to FCC504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (TTY).

SYNOPSIS

In this Further Notice of Proposed Rulemaking, the Commission considers additional frequency bands for ESIM communication with GSO satellites that would promote innovative and flexible use of satellite technology and provide new opportunities for a variety of uses.

FURTHER NOTICE OF PROPOSED RULEMAKING

In this Further Notice of Proposed Rulemaking, in an effort to provide additional flexibility to the growing ESIMs market, the Commission seeks comment on expanding the frequencies available to ESIMs communicating with GSO FSS satellite networks. SES and O3b requested that the Commission consider expanding GSO ESIMs into additional bands. Specifically, SES and O3b suggested that ESIM operations should also be allowed in the FSS downlink frequency bands 10.7-10.95 GHz, 11.2-11.45 GHz, and 17.8-18.3 GHz. AC BidCo support this proposal. SES and O3b also requested that the Commission propose rules for ESIM

operations communicating with NGSO FSS systems. The Commission may address the ESIM operation with NGSO FSS systems in a separate NPRM.

The Commission seeks comment on allowing ESIMs to operate in all of the frequency bands in which earth stations at fixed locations operating in GSO FSS satellite networks can be blanket-licensed because in this situation operation of earth stations in motion should not introduce a material change to the interference environment created or to the protection required. Consistent with the revisions to the Table of Frequency Allocations the Commission adopted in the *NGSO FSS Report and Order*, the Commission seeks comment on expanding the Ku-band space-to-Earth frequency ranges in which ESIMs can be authorized to receive transmissions from GSO FSS space stations to also include the ranges 10.7-10.95 GHz and 11.2-11.45 GHz. The Commission seeks comment on whether these operations would be on an unprotected basis with respect to other services. In the Ka-band, the Commission seeks comment on allowing ESIMs to receive signals from GSO FSS satellite space stations on a secondary basis in the 17.8-18.3 GHz band and, on a primary basis, in the 19.3-19.4 and 19.6-19.7 GHz band. Can FSS operators design their systems such that widely deployed ESIMs can avoid interference from widely deployed FS (*e.g.* by switching to other frequencies when interference occurs)? What, if any impact will there be on customers if an ESIMs encounters interference in frequency bands where FSS earth stations are not entitled to protection? The Commission also seeks comment on whether to allow ESIMs to operate in GSO FSS satellite networks in the 18.8-19.3 GHz (space-to-Earth) and 28.6-29.1 GHz (Earth-to-space) frequency bands on an unprotected, non-interference basis with respect to NGSO FSS satellite systems. Finally, the Commission seeks comment on any possible effects expanding the frequencies available to ESIMs communicating with GSO FSS satellite networks may have on existing or future services in these bands or

adjacent frequency bands and on any necessary changes to our rules that may be appropriate to accommodate them.

PROCEDURAL MATTERS

Ex Parte Procedures. The proceeding this Further Notice initiates shall be treated as a “permit-but-disclose” proceeding in accordance with the Commission’s *ex parte* rules. Persons making *ex parte* presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine period applies). Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentation must (1) list all persons attending or otherwise participating in the meeting at which the *ex parte* presentation was made, and (2) summarize all data presented and arguments made during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter’s written comments, memoranda or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum. Documents shown or given to Commission staff during *ex parte* meetings are deemed to be written *ex parte* presentations and must be filed consistent with rule 1.1206(b). In proceedings governed by rule 1.49(f) or for which the Commission has made available a method of electronic filing, written *ex parte* presentations and memoranda summarizing oral *ex parte* presentations, and all attachments thereto, must be filed through the electronic comment filing system available for that proceeding, and must be filed in their native format (*e.g.*, .doc, .xml, .ppt, searchable .pdf). Participants in this proceeding should familiarize themselves with the Commission’s *ex parte* rules.

Comment Period and Procedures. Pursuant to sections 1.415 and 1.419 of the Commission's rules, 47 CFR 1.415, 1.419, interested parties may file comments and reply comments on or before the dates indicated on the first page of this document. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS). *See Electronic Filing of Documents in Rulemaking Proceedings*, 63 FR 24121 (1998).

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: <http://apps.fcc.gov/ecfs/>.
- Paper Filers: Parties who choose to file by paper must file an original and one copy of each filing. If more than one docket or rulemaking number appears in the caption of this proceeding, filers must submit two additional copies for each additional docket or rulemaking number.

Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

- All hand-delivered or messenger-delivered paper filings for the Commission's Secretary must be delivered to FCC Headquarters at 445 12th St., SW, Room TW-A325, Washington, DC 20554. The filing hours are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes and boxes must be disposed of before entering the building.
- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9050 Junction Drive, Annapolis Junction, MD 20701.
- U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW, Washington DC 20554.

People with Disabilities: To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (tty).

Regulatory Flexibility Act: Final Regulatory Flexibility Analysis. Pursuant to the Regulatory Flexibility Act of 1980, as amended, 5 U.S.C. 601 *et seq.* (RFA), the Commission's Final Regulatory Flexibility Analysis (FRFA) on the possible significant economic impact on small entities of the policies and rules addressed in this Report and Order, is attached as Appendix D. The Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, will send a copy of this *Report and Order*, including the FRFA, to the Chief Counsel for Advocacy of the Small Business Administration (SBA).

Initial Regulatory Flexibility Analysis. In addition, as required by the RFA, the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) regarding the possible significant economic impact on small entities of the policies and rules adopted in the Further Notice of Proposed Rulemaking, which is found in Appendix F. The Commission requests written public comment on the IRFA. Comments must be filed in accordance with the same deadlines as comments filed in response to the FNPRM and must have a separate and distinct heading designating them as responses to the IRFA. The Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, will send a copy of this FNPRM, including the IRFA, to the Chief Counsel for Advocacy of the SBA.

Paperwork Reduction Act. This document contains modified information collection requirements subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. It will be submitted to the Office of Management and Budget (OMB) for review under section 3507(d) of the PRA. OMB, other Federal agencies, and the general public are invited to comment on the

modified information collection requirements contained in this document. In addition, the Commission notes that pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, *see* 44 U.S.C. 3506(c)(4), the Commission previously sought specific comment on how the Commission might further reduce the information collection burden for small business concerns with fewer than 25 employees.

In this document, the Commission has assessed the effects of reducing the application burdens of GSO FSS ESIM applicants, and find that doing so will serve the public interest and is unlikely to directly affect businesses with fewer than 25 employees.

In addition, this document contains proposed modified information collection requirements. The Commission, as part of its continuing effort to reduce paperwork burdens, invites the general public and the Office of Management and Budget to comment on the information collection requirements contained in this document, as required by the Paperwork Reduction Act of 1995, Public Law 104-13. In addition, pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, *see* 44 U.S.C. 3506(c)(4), the Commission seeks specific comment on how the Commission might further reduce the information collection burden for small business concerns with fewer than 25 employees.

Congressional Review Act. The Commission will send a copy of this Report and Order to Congress and the Government Accountability Office pursuant to the Congressional Review Act, *see* 5 U.S.C. 801(a)(1)(A).

INITIAL REGULATORY FLEXIBILITY ANALYSIS

As required by the Regulatory Flexibility Act (RFA),¹ the Commission has prepared this Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on a substantial number of small entities by the policies and rules that the Commission seeks comment on in this Notice. The Commission requests written public comments on this IRFA. Commenters must identify their comments as responses to the IRFA and must file the comments by the deadlines for comments on the Notice provided above in Section V.B. The Commission will send a copy of the Notice, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration.² In addition, the Notice and IRFA (or summaries thereof) will be published in the Federal Register.³

A. Need for, and Objectives of, the Proposed Rules

The Further Notice of Proposed Rulemaking seeks comment on extending the use of other frequency bands in which blanket-licensed FSS earth stations are permitted for ESIMs communicating with GSO FSS space stations.

B. Legal Basis

The action would be authorized under sections 4(i), 7(a), 10, 303, 308(b), and 316 of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), 157(a), 160, 303, 308(b), 316.

¹ See 5 U.S.C. 603. The RFA, *see* 5 U.S.C. 601 *et seq.*, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Pub. L. No. 104-121, Title II, 110 Stat. 857 (1996).

² See 5 U.S.C. 603(a).

³ *Id.*

C. Description and Estimate of the Number of Small Entities to Which the Proposed Rules May Apply

The RFA directs agencies to provide a description of, and, where feasible, an estimate of, the number of small entities that may be affected by the proposed rules, if adopted.⁴ The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."⁵ In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.⁶ A small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).⁷

Satellite Telecommunications. This category comprises firms "primarily engaged in providing telecommunications services to other establishments in the telecommunications and broadcasting industries by forwarding and receiving communications signals via a system of satellites or reselling satellite telecommunications."⁸ The category has a small business size standard of \$32.5 million or less in average annual receipts, under SBA rules.⁹ For this category, Census Bureau data for 2012 show that there were a total of 333 firms that operated for the entire

⁴ 5 U.S.C. 603(b)(3).

⁵ 5 U.S.C. 601(6).

⁶ 5 U.S.C. 601(3) (incorporating by reference the definition of "small business concern" in 15 U.S.C. 632). Pursuant to the RFA, the statutory definition of a small business applies "unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register." 5 U.S.C. 601(3).

⁷ Small Business Act, 15 U.S.C. 632 (1996).

⁸ U.S. Census Bureau, 2012 NAICS Definitions, "517410 Satellite Telecommunications"; <http://www.census.gov/naics/2007/def/ND517410.HTM>.

⁹ 13 CFR 121.201, NAICS code 517410.

year.¹⁰ Of this total, 299 firms had annual receipts of less than \$25 million.¹¹ Consequently, the Commission estimates that the majority of satellite telecommunications providers are small entities.

D. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements for Small Entities

The FNPRM seeks comment on extending the use of other frequency bands in which blanket-licensed FSS earth stations are permitted for ESIMs communicating with GSO FSS space stations. This would reduce paperwork costs for such satellite operators who would no longer need to file separate application materials for these systems. Operators will also no longer need to request waivers for operations that would be covered under specific regulations.

E. Steps Taken to Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered

The RFA requires an agency to describe any significant, specifically small business, alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives (among others): “(1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance and reporting requirements under the rules for such small entities; (3) the use of performance rather than

¹⁰ U.S. Census Bureau, *2012 Economic Census of the United States*, Table EC1251SSSZ4, Information: Subject Series - Estab and Firm Size: Receipts Size of Firms for the United States: 2012, NAICS code 517410 http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_51SSSZ4&prodType=table.

¹¹ *Id.*

design standards; and (4) an exemption from coverage of the rule, or any part thereof, for such small entities.”¹²

The NPRM seeks comments on extending the use of other frequency bands in which blanket-licensed FSS earth stations are permitted for ESIMs communicating with GSO FSS space stations. This would reduce the economic and other impacts for these service providers by reducing the regulatory burden. Specifically, providers would no longer have to file applications that are outside of the standard rule provisions. However, the Commission invites comment on this change and any alternatives.

F. Federal Rules that May Duplicate, Overlap, or Conflict With the Proposed Rules

None.

CONCLUSION AND ORDERING CLAUSES

IT IS ORDERED, pursuant to sections 4(i), 7(a), 303, 308(b), and 316 of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), 157(a), 303, 308(b), 316, that this Report and Order IS ADOPTED, the policies, rules, and requirements discussed herein ARE ADOPTED, Parts 2 and 25 of the Commission’s rules ARE AMENDED as set forth in Appendix B, and this Further Notice of Proposed Rulemaking IS ADOPTED.

IT IS FURTHER ORDERED that the rules and requirements adopted in the Report and Order WILL BECOME EFFECTIVE [30 days from the date of publication in the Federal Register], except for those rules and requirements containing new or modified information collection requirements that require review by the OMB under the PRA, which WILL BECOME

¹² 5 U.S.C. 603(c)(1)-(c)(4).

EFFECTIVE after OMB review and approval, on the effective date specified in a notice that International Bureau will publish in the Federal Register announcing such approval and effective date.

IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this Report and Order and Further Notice of Proposed Rulemaking, including the Initial and Final Regulatory Flexibility Analyses, to the Chief Counsel for Advocacy of the Small Business Administration.

IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this Report and Order to Congress and the Government Accountability Office pursuant to the Congressional Review Act, *see* 5 U.S.C. 801(a)(1)(A).

List of Subjects

47 CFR Part 2

Radio, Table of Frequency Allocations

47 CFR Part 25

Administrative practice and procedure, Earth stations, Satellites

FEDERAL COMMUNICATIONS COMMISSION

Katura Jackson,
Federal Register Liaison Officer,
Office of the Secretary.

Proposed Rules

For the reasons discussed in the preamble, the Federal Communications Commission proposes to amend 47 CFR parts 2 and 25 as follows:

PART 2 – FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

1. The authority citation for part 2 continues to read as follows:

AUTHORITY: 47 U.S.C. 154, 302a, 303, and 336, unless otherwise noted.

2. Section 2.106, the Table of Frequency Allocations, is amended as follows:

- a. Revise page 52.

- b. Revise footnote NG527A in the list of non-Federal Government (NG) Footnotes.

The revisions read as follows:

§ 2.106 Table of Frequency Allocations.

* * * * *

17.8-18.1 FIXED FIXED-SATELLITE (space-to-Earth) 5.434A (Earth-to-space) 5.516 MOBILE 5.519			17.8-18.3 FIXED-SATELLITE (space-to-Earth) U5334 G117	17.8-18.3 FIXED Fixed-satellite (space-to-Earth) NG627A	Satellite Communications (25) TV Broadcast Auxiliary (74F) Cable TV Relay (78) Fixed Microwave (101)
18.1-18.4 FIXED FIXED-SATELLITE (space-to-Earth) 5.434A 5.516B (Earth-to-space) 5.520 MOBILE 5.519 5.521 18.4-18.6 FIXED FIXED-SATELLITE (space-to-Earth) 5.434A 5.516B MOBILE			U5519 18.3-18.6 FIXED-SATELLITE (space-to-Earth) U5334 G117	U5334 U5519 18.3-18.6 FIXED-SATELLITE (space-to-Earth) NG164 NG627A	
18.6-18.8 EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) 5.522B MOBILE except aeronautical mobile Space research (passive) 5.522A 5.522C	18.6-18.8 EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.522B MOBILE except aeronautical mobile SPACE RESEARCH (passive) 5.522A	18.6-18.8 EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) 5.522B MOBILE except aeronautical mobile Space research (passive) 5.522A	18.6-18.8 EARTH EXPLORATION-SATELLITE (passive) FIXED-SATELLITE (space-to-Earth) U5255 U5334 G117 SPACE RESEARCH (passive)	18.6-18.8 EARTH EXPLORATION-SATELLITE (passive) FIXED-SATELLITE (space-to-Earth) U5255 NG164 NG627A SPACE RESEARCH (passive)	Satellite Communications (25)
18.8-19.3 FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.523A MOBILE			U5139 U5254 18.8-20.2 FIXED-SATELLITE (space-to-Earth) U5334 G117	U5139 U5254 U5334 18.8-19.3 FIXED-SATELLITE (space-to-Earth) NG165 NG627A U5139 U5334	
19.3-19.7 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 5.523B 5.523C 5.523D 5.523E MOBILE			19.3-19.7 FIXED FIXED-SATELLITE (space-to-Earth) NG166 NG627A U5334		Satellite Communications (25) TV Broadcast Auxiliary (74F) Cable TV Relay (78) Fixed Microwave (101)
19.7-20.1 FIXED-SATELLITE (space-to-Earth) 5.434A 5.434B 5.516B 5.527A Mobile-satellite (space-to-Earth) 5.524	19.7-20.1 FIXED-SATELLITE (space-to-Earth) 5.434A 5.434B 5.516B 5.527A MOBILE-SATELLITE (space-to-Earth) 5.524 5.525 5.526 5.527 5.528 5.529 5.524	19.7-20.1 FIXED-SATELLITE (space-to-Earth) 5.434A 5.434B 5.516B 5.527A Mobile-satellite (space-to-Earth)	19.7-20.2 FIXED-SATELLITE (space-to-Earth) NG627A MOBILE-SATELLITE (space-to-Earth)		Satellite Communications (25)
20.1-20.2 FIXED-SATELLITE (space-to-Earth) 5.434A 5.434B 5.516B 5.527A MOBILE-SATELLITE (space-to-Earth) 5.524 5.525 5.526 5.527 5.528 20.2-21.2 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard frequency and time signal-satellite (space-to-Earth)			U5139 20.2-21.2 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard frequency and time signal-satellite (space-to-Earth) G117	5.525 5.526 5.527 5.528 5.529 U5334 20.2-21.2 Standard frequency and time signal-satellite (space-to-Earth)	
5.524					Page 52

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NON-FEDERAL GOVERNMENT (NG) FOOTNOTES

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NG527A Earth Stations in Motion (ESIMs), as regulated under 47 CFR part 25, are an application of the fixed-satellite service and the following provisions shall apply:

(a) In the band 10.7-11.7 GHz (space-to-Earth), ESIMs may be authorized to communicate with geostationary satellites, subject to the condition that these earth stations may not claim protection from transmissions of non-Federal stations in the fixed service.

(b) In the bands 11.7-12.2 GHz (space-to-Earth), 14.0-14.5 GHz (Earth-to-space), 18.3-18.8 GHz (space-to-Earth), 19.3-19.4 GHz (space-to-Earth), 19.6-20.2 GHz (space-to-Earth), 28.35-28.6 GHz (Earth-to-space), and 29.25-30.0 GHz (Earth-to-space), ESIMs may be authorized to communicate with geostationary satellites on a primary basis.

(c) In the band 17.8-18.3 GHz (space-to-Earth), ESIMs may be authorized to communicate with geostationary satellites on a secondary basis.

(d) In the bands 18.8-19.3 GHz (space-to-Earth) and 28.6-29.1 GHz (Earth-to-space), ESIMs may be authorized to communicate with geostationary satellites, subject to the condition that these earth stations may not cause harmful interference to, or claim protection from, non-geostationary-satellite systems in the fixed-satellite service.

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PART 25 – SATELLITE COMMUNICATIONS

3. The authority citation for part 25 continues to read as follows:

AUTHORITY: 47 U.S.C. 154, 301, 302, 303, 307, 309, 310, 319, 332, 605, and 721, unless otherwise noted.

4. Section 25.202 is amended by revising paragraphs (a)(8) and (10) and removing and reserving paragraph (a)(11) to read as follows:

§ 25.202 Frequencies, frequency tolerance, and emission limits.

(a) * * *

(8) The following frequencies are available for use by Earth Stations on Vessels (ESVs) communicating with GSO FSS space stations, subject to the provisions in § 2.106 of this chapter:

3700-4200 MHz (space-to-Earth)

5925-6425 MHz (Earth-to-space)

* * * * *

(10) The following frequencies are available for use by Earth Stations in Motion (ESIMs) communicating with GSO FSS space stations, subject to the provisions in § 2.106 of this chapter:

10.7-11.7 GHz (space-to-Earth)

11.7-12.2 GHz (space-to-Earth)

14.0-14.5 GHz (Earth-to-space)

17.8-18.3 GHz (space-to-Earth)

18.3-18.8 GHz (space-to-Earth)

18.8-19.3 GHz (space-to-Earth)

19.3-19.4 GHz (space-to-Earth)

19.6-19.7 GHz (space-to-Earth)

19.7-20.2 GHz (space-to-Earth)

28.35-28.6 GHz (Earth-to-space)

28.6-29.1 GHz (Earth-to-space)

29.25-30.0 GHz (Earth-to-space)